

Body Composition Differences in Military Pilots and Aircrew

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Abstract

BACKGROUND: This research aimed to analyze the body composition (BC) of different military units in the Spanish Armed Forces. **METHODS:** We studied 179 male aircrew members (86 airplane pilots, 15 helicopter pilots and 78 transport aircrew) using bioimpedance. **RESULTS:** Airplane pilots (AP) had higher means than transport aircrew (TA) in height (179.56 cm vs. 173.90 cm), total body water (46.72 L vs. 42.96 L), intracellular body water (29.45 L vs. 26.89 L), extracellular body water (17.27 L vs. 16.07 L), proteins (12.72 kg vs. 11.63 kg), minerals (4.50 kg vs. 4.15 kg), soft lean mass (60.21 kg vs. 55.29 kg), fat free mass (63.95 kg vs. 58.74 kg), skeletal muscle mass (36.41 kg vs. 33.07 kg), and lower means in body mass index (24.01 kg vs. 25.49 kg), body fat mass (BFM) (13.53 kg vs. 18.81 kg) and percentage of body fat (PBF) (16.83 kg vs. 23.79 kg). Helicopter pilots also had significantly lower means in BFM (13.21 kg vs. 18.81 kg) and PBF (17.11 kg vs. 18.81 kg) than TA. **DISCUSSION:** The different types of activity between AP (active coping with G forces) and TA (inactive) during operational flights negatively affects the body composition of TA. These results suggest differences in aircrews training and job tasks. Specific training is needed for each unit: it should be individualized, prevent injuries, and be directed by qualified personnel.

Keywords: Body Composition, Body Composition, Aircrew